

# Environmental Checklist

1. **Project Title:** Department of Fish and Game Hatchery EIR/EIS
2. **Lead Agency Name and Address:** California Department of Fish and Game  
830 "S" Street  
Sacramento, Ca 95811
3. **Contact Person and Phone Number:** James Starr, 916/327-0713
4. **Project Location:** Inland waters of the State of California
5. **Project Sponsor's Name and Address:** James Starr  
830 "S" Street  
Sacramento, CA 95811
6. **General Plan Designation:** Multiple
7. **Zoning:** Multiple
8. **Description of Project:**

## **Background:**

The California Department of Fish and Game (CDFG) has been rearing and stocking fish in the inland waters of California since the late 1800s when the State of California enacted legislation to restore and preserve fish in State waters. This legislation called for the newly formed California State Fish and Game Commission to establish "fish breederies" to stock and supply streams, lakes, and bays with both foreign and domestic fish. In the early 1900s, CDFG assumed responsibility for the State for stocking hatchery trout into California lakes and rivers. Since 1945, CDFG has assumed responsibility for the rearing and stocking of both inland and anadromous fish species at 21 hatcheries and planting bases located throughout the State.

## **Proposed Project:**

CDFG is proposing to continue the stocking of hatchery-reared inland and anadromous fish for the recreational use of anglers, while balancing the interaction between hatchery-stocked fish and threatened/endangered species and other environmental effects associated with the stocking of fish. This continuing program would be managed in accordance with guidance contained in Assembly Bill 7 (AB-7), which added Section 13007 to the California Fish and Game Code in 2005. This Section of the Code mandates that nearly one-third of the fees collected from the issuance of sport fishing licenses be deposited into the Hatchery and Inland Fisheries Fund and used for the management, maintenance, and capital improvement of California's fish hatcheries, the Heritage and Wild Trout Program, other sport fishing activities, and enforcement of these activities.

Furthermore, AB-7 establishes requirements for yearly increases in trout production and mandates that CDFG increase production of trout based upon the 2008 sport fishing license sales.

To date, production levels for the State's eight salmon and steelhead hatcheries have been set by operating licenses and, until recently, have been fairly constant. State anadromous hatcheries are operated downstream of dams to mitigate the loss of natural spawning habitat upstream.

Over the past 6 years, CDFG has planted more than 49 million combined salmon and trout annually in hundreds of locations throughout California. Trout have been planted in high mountain lakes, low elevation reservoirs, and various streams and creeks. Salmon have been planted mostly in rivers and direct tributaries to the Pacific Ocean, with the exception of inland kokanee, coho, and Chinook salmon populations that have been planted in reservoirs.

It is anticipated that the production of trout species will increase as a result of the implementation of AB-7. This increase in production will be achieved through options within the existing hatchery system (described in more detail below) and through the continued assistance of Sport Fishing Restoration Act (SFRA) funding from the U.S. Fish and Wildlife Service (FWS). These additional fish will be released primarily into the same water bodies that are already a part of the CDFG planting program.

CDFG intends to prepare an environmental impact report/environmental impact statement (EIR/EIS) to consider all aspects of its fish rearing/stocking program and its permitting of private stocking activities. The EIR/EIS will describe the beneficial and adverse impacts associated the CDFG hatchery and stocking program, the effects of Private Stocking Permits issued by CDFG, and stocking activities that are not directly regulated by CDFG. The environmental analysis will be conducted pursuant to the requirements of the California Environmental Quality Act (CEQA), and the National Environmental Policy Act (NEPA). The CEQA analysis is the result of a lawsuit filed in October 2006 by the Pacific Rivers Council and the Center for Biological Diversity and subsequent ruling that CDFG must conduct a public review of its trout stocking program. The results of the review documented in the EIR/EIS will govern future fish stocking management decisions to improve management of the Statewide fish stocking program to better meet the needs of California's native species and recreational anglers. The elements of the CDFG program that will be analyzed in the EIR/EIS are described briefly below.

### **The State Hatchery System:**

CDFG currently operates eight anadromous fish hatcheries and 13 trout hatcheries throughout the State. Together, these facilities rear four trout species, three salmon species, and one species of char. The trout species include rainbow, brown, cutthroat, and golden. The salmon species include Chinook, coho and kokanee. The char species is the brook trout.

### **Anadromous Fish Hatcheries:**

As previously stated, CDFG anadromous fish hatcheries are located on rivers that have had their water supplies impounded and access to potential spawning habitat blocked. These hatcheries are operated as mitigation for the loss of habitat upstream of the dam facilities. Fish releases from these facilities typically occur directly into the rivers where the hatcheries are located.

Occasionally, anadromous salmonid smolts may be transported downstream to release locations in an effort to increase their survival and ultimate return to the hatchery for spawning. This transport downstream may be undertaken to avoid adverse water quality or temperature conditions, predator hazards, potential diversion losses, or adverse stream conditions downstream of the hatchery.

Spawning at anadromous fish hatcheries is done on a yearly basis when adult fish return. Once eggs and milt are collected, the eggs are cultivated and raised in a hatchery building until they can be moved to hatchery troughs and ultimately into raceways for grow-out and release from the hatchery.

Hatchery operations extend beyond the process of spawning and rearing fish that is described above. The physical facilities that must be operated and maintained include: a water supply system, the hatchery buildings and raceways, a water treatment and disposal system, and public access facilities. In addition, the hatchery operators are responsible for disease control activities, which may include manipulation of water flows and temperature and the use of chemical treatment agents.

The anadromous fish hatcheries operated by CDFG are:

Iron Gate (Siskiyou County)  
8638 Lakeview Road  
Hornbrook, CA 96044

Mad River (Humboldt County)  
1660 Hatchery Road  
Arcata, CA 95521

Trinity River (Trinity County)  
1000 Hatchery Drive  
Lewiston, CA 96052

Feather River (Butte County)  
5 Table Mountain Blvd.  
Oroville, CA 95965

Feather River–Thermalito Annex (Butte County)  
4700 Highway 99  
Oroville, CA 95965

Warm Springs (Sonoma County)  
3246 Skaggs Springs Road  
Geyserville, CA 95441

Nimbus (Sacramento County)  
2001 Nimbus Rd., Ste. F  
Gold River, CA 95670

Mokelumne (San Joaquin County)  
25800 North McIntire Road  
Clements, CA 95227

Merced River (Merced County)  
4998 Robinson Road  
Snelling, Ca 95369

**Trout Hatcheries:**

As previously stated, CDFG trout hatcheries rear and release four trout, three salmon, and one char species. The hatcheries that raise trout acquire trout eggs through “broodstock” fish located at various State hatcheries, or from captured wild fish. These eggs are reared in a manner similar to anadromous operations, except that trout hatchery fish are stocked in inland waters. These waters can be divided into three categories: (1) high mountain lakes; (2) streams and creeks; and (3) low-elevation reservoirs and ponds. Releases into low elevation reservoirs and ponds include the release of small numbers of fish into urban settings (usually human-made ponds and lakes) through the CDFG Fishing-in-the-City Program. CDFG trout hatchery fish typically are released via hatchery truck at assigned stocking locations. CDFG also uses aerial planting and pack-horses as necessary to plant fish in remote locations that are inaccessible to hatchery stocking trucks. Fish are planted in various sizes and locations based on an allocation system that considers environmental conditions and recreational use. Inland salmon eggs that are reared in hatcheries either are collected at egg collection stations located where the salmon have been released (coho and Chinook) or, as in the case of kokanee salmon eggs, are collected at locations within the State and occasionally from sources outside of California (typically, Oregon and Washington).

Trout hatcheries require operational activities beyond spawning and rearing fish, similar to those previously described for anadromous fish hatcheries.

The trout hatcheries operated by CDFG are:

Mount Shasta (Siskiyou County)  
#3 North Old Stage Road  
Mt. Shasta, CA 96067

Darrah Springs (Tehama County)  
29661 Wildcat Road  
Paynes Creek, CA 96075

Crystal Lake (Shasta County)  
40158 Baum Lake Road  
Cassel, CA 96016

American River (Sacramento County)  
2001 Nimbus Road  
Gold River, CA 95670

Moccasin Creek (Tuolumne County)  
Highway 49 and 120  
Moccasin, CA 95347

Hot Creek (Mono County)  
121 Hot Creek Hatchery Road  
Mammoth Lakes, CA 93546

Black Rock (Inyo County) Annex of Mount Whitney Hatchery  
1 East Black Rock Springs Road  
Independence, CA 93526

Fish Springs (Inyo County)  
215 Fish Springs Road  
Big Pine 93513

Mount Whitney (Inyo County)  
#1 Golden Trout Circle  
Independence, CA 93526

San Joaquin (Fresno County)  
17372 Brook Trout Drive  
Friant, CA 93626

Fillmore (Ventura County)  
612 East Telegraph Road  
Fillmore, CA 93016

Mojave (San Bernardino County)  
12550 Jacaranda Avenue  
Victorville Road, Ca 92395

Kern River Planting Base (Kern County)  
14400 North Sierra Way  
Kernville, Ca 93238

Silverado Planting Base (Napa County)  
7329 Silverado Trail  
Yountville, Ca 94599

**Hatchery Expansion:**

To meet the fish production requirements of AB-7, CDFG expects to make both physical and operational changes at some or all of its trout hatcheries. While these changes are not yet defined, they could include:

- multiple rearing periods in any given year,
- shortening of the rearing periods to accommodate multiple rearing periods,
- addition of rearing tanks within existing structures,
- construction of new rearing buildings and exterior rearing raceways,
- use of net pens in some planting locations as an extension of existing rearing facilities,
- expansion of water supply and water treatment systems, and
- construction of new administrative space on hatchery grounds.

Production requirements also may be met by purchasing eggs or fish from private rearing facilities within or outside of the State, or from government-operated facilities in other states.

**The Private Stocking Permit Program:**

CDFG has authority under Title 14, California Code of Regulations, Section 238, to issue permits to private individuals or firms for stocking fish in California's waters. In recent years, CDFG has issued approximately 80 private stocking permits annually, with the majority being issued to individuals planting rainbow, brook and brown trout; channel and bullhead catfish; largemouth bass; white and black crappie; bluegill; redear; mosquitofish; white and green sturgeon; and triploid grass carp. The permit program gives the State authority over the type, location, and timing of fish stocking by the private sector. As previously stated, this analysis discusses the effects of the private stocking program on biological resources, including sensitive species, wetlands, and ecosystem function.

**9. Surrounding Land Uses and Setting:**

Varied

**10. Other Public Agencies Whose Approval or Input May Be Needed:**

United States Fish and Wildlife Service

National Marine Fisheries Service

Regional Water Quality Control Board (Regions 1, 5, and 6)

United States Forest Service

United States Bureau of Land Management

United States Department of the Interior, Bureau of Reclamation

California Department of Water Resources

United States Army Corps of Engineers

**Environmental Factors Potentially Affected:**

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agricultural Resources             | <input type="checkbox"/> Air Quality            |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology/Soils          |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning      |
| <input type="checkbox"/> Mineral Resources               | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing     |
| <input type="checkbox"/> Public Services                 | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems       | <input type="checkbox"/> Mandatory Findings of Significance |   |

**Determination:**

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

\_\_\_\_\_  
Signature

James A. Starr  
Printed Name

August 4, 2008  
Date

Ca. Department of Fish and Game  
For

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>I. AESTHETICS.</b> Would the project:					
a.	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

As previously described, AB-7 imposes production goals and minimum releases of trout (beginning July 1, 2007) that will require an associated increase in the production of hatchery trout and their release into the wild. The increase of hatchery production necessitated by AB-7 will require the expansion of some or all of CDFG's hatchery facilities. Information regarding which facilities would be improved and specific improvements that would be made is not available at this time.

- a. For the purpose of this analysis, it is assumed that all facility improvements would occur at existing hatchery facilities on CDFG property. The majority of improvements would occur within the footprint of existing hatchery facilities, such as new rearing tanks. However, some improvements would be add-ons to existing facilities, such as the construction of new rearing and administrative buildings and exterior rearing raceways, which would not have a substantial adverse effect on a scenic vista and the impact would be less than significant.
- b. It is assumed that any new structures constructed as part of the proposed project would be visually and aesthetically compatible with their surroundings, and designed and constructed in a manner that is consistent with the current use and character of existing facilities. Therefore, damage to scenic resources is considered to be a less-than-significant impact.
- c. Existing hatchery facilities have been in place for many years; therefore, slight expansions or modifications to the existing facilities are not expected to substantially degrade the existing visual character/quality of any of the project sites or its surroundings; this is considered a less-than-significant impact.
- d. For the most part, existing hatcheries are located in rural areas with low population densities. Light output is generally low, and any new source of light or glare at a facility is expected to be negligible considering the current character



and use of hatchery sites. Also, no plan currently exists that indicates a major change in lighting practices that would substantially affect daytime or night-time views. Therefore, the impact of the proposed project on views as a result of increased light or glare is also considered to be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>II. AGRICULTURAL RESOURCES.</b> In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Development of the proposed project would not have the potential to convert prime farmland, unique farmland, or farmland of statewide importance to non-agricultural uses. Construction of facilities, including rearing tanks, rearing buildings, rearing raceways, water systems, and administrative facilities, would occur on lands designated for hatchery use. If expansion of a hatchery facility is required to meet increased demands in production, it would occur on hatchery property. Any expansions that would occur within the hatchery facilities will occur on land that was previously zoned for such use. Therefore, changes to the physical environment associated with the proposed project would have no impact on agricultural resources.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>III. AIR QUALITY.</b> When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:					
a.	Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

As previously stated, CDFG operates 21 fish hatcheries throughout the State. These hatcheries fall within different air basins and, therefore, within different air quality management districts (AQMDs). These AQMDs have different regulatory plans to control air pollutants that do not meet State-required air quality standards, including regional Air Quality Management Plans (AQMPs) and air quality plans that address specific pollutants in specific geographic locations.

- a. The potential for air quality impacts associated with the proposed project are related to additional emissions from construction and operation of hatchery facilities and include:
- additional construction vehicles required to make physical improvements to hatchery facilities;
  - additional CDFG vehicles, vessels, and aircraft that will be necessary to accommodate expanded fish production and transport of an increased number of fish to planting sites; and
  - stationary sources as a result of expanded hatchery operations.

There is the potential for construction activities at hatchery facilities to result in an increase in pollution concentrations. However, the additional number of vehicles necessary to construct facilities to meet additional fish production needs is anticipated to be small, and potential increases in air pollutants associated with construction activities would be temporary and minor. The additional number of vehicles required to conduct additional stocking trips is also anticipated to be small and would vary from year to year based on annual production goals.

For hatcheries in jurisdictions that are not in compliance with State-required air quality standards, the proposed activities could constitute a portion of an ongoing nonattainment status. However, the additional emissions that would result from the proposed activities are not likely to result in a cumulatively significant air quality impact that would affect overall compliance with a jurisdiction's applicable air quality plan. To mitigate any potential impacts associated with construction and operation of the proposed project, CDFG will consult with all applicable AQMDs with respect to the requirements of adopted regulatory plans, and will comply with the requirements of all adopted air quality plans at all times.

- b. Short-term construction-related air quality impacts are expected to be less than significant and, if necessary, can be mitigated by using standard best management practices (BMPs). In addition, CDFG is in the process of upgrading its diesel motor vehicles with devices to reduce pollutant emissions in accordance with the Governor's standards. Operational components of the proposed project, including emissions from mobile (CDFG vehicles, vessels, and aircraft) and stationary sources are not likely to affect ambient air quality sufficiently to exceed any threshold of significance. Therefore, the impact would be less than significant.
- d. No sensitive receptors will be exposed to substantial pollutant concentrations and no impacts are expected.
- e. The project will not create objectionable odors affecting a substantial number of people; no impact expected.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES.</b> Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a. For the purposes of this initial study, sensitive biological resources present or potentially present within project areas were identified through a literature review using the following resources: CDFG's California Natural Diversity Data Base (CDFG 2008) and State- and Federally Listed Endangered and Threatened Animals of California (CDFG 2008b). Sensitive biological resources included those species and distinct population segments (DPS) that were federally and/or State-listed, proposed for listing, or candidate species; designated as National Marine Fisheries Service (NMFS) or CDFG Species of Concern; or designated as United States Forest Service Sensitive Species.

For anadromous and inland hatchery programs, potential project-related impacts on special-status species and measures to avoid or minimize impacts to less than significant are identified under genetic and ecological impact sections below.

## Genetic Impacts

Genetic fitness refers to the extent that an individual is adapted to, or is able to produce offspring in its local environment; genetic variation is loosely the genetic differences within populations that allow for adaptations in response to changing environmental conditions. Results of studies over the last two decades indicate that hatchery programs may reduce both genetic fitness and genetic variation of both hatchery and naturally spawned salmonid populations through various mechanisms (Hindar et al. 1991; Waples 1991; Vogel and Marine 1991; Lynch 1991; Hedrick and Miller 1992; Busack and Currens 1995; Campton 1995; Waples 1995; Allendorf and Waples 1996; NRC 1996; Reisenbichler 1997; Reisenbichler and McIntyre 1977; Reisenbichler and Rubin 1999; Waples 1999; Lynch and O'Hely 2001; Ford 2002; Wang et al. 2002; Reisenbichler et al. 2004; Myers et al. 2004; Araki et al. 2008) including:

- Straying of hatchery-origin fish and consequent hybridization with natural populations may result in reduced genetic variation among populations when straying occurs across a large geographic range and may result in reduced natural population productivity associated with the transfer of non-adaptive genes from the hatchery population;
- Hybridization and introgression. Incorporation of new genetic material can lead to the replacement of locally adapted genotypes if hybrids are more fit and have breeding advantages over natural populations;
- Inbreeding depression. Small broodstock sizes expose individuals in a population to the effects of deleterious recessive genes through matings between close relatives;
- Outbreeding depression. Broodstock used from divergent populations may result in hybrid progeny inheriting traits not suited to the local environment or may result in reduced fitness attributable to disruption of co-adapted gene complexes, which are groups of genetic traits that have high fitness when they occur together, but have low fitness otherwise;
- Deleterious mutation accumulation. New mutations may be effectively neutral in hatchery populations but are deleterious in the wild; and
- Domestication selection. Conscious or unconscious selections for trait(s) that are suitable for the hatchery environment yet are not suitable for the natural environment.

The potential for genetic impacts is increased for natural populations of Chinook salmon by the high straying rates of hatchery-reared salmon released “off site” relative to fish released “in river” or “on site”(at or near the hatchery). For instance, the Feather River, Nimbus, and Mokelumne River Hatcheries conduct off-site releases of fall-run Chinook salmon at San Pablo Bay, which may pose hazards to naturally spawning fall-run populations in the Central Valley. Prior to 2002, off-site releases of Feather River spring-run Chinook salmon also were made at San Pablo Bay, which likely posed hazards for the few remaining natural spring Chinook salmon runs in the upper Sacramento River. Now, half of the Feather River spring-run Chinook salmon juvenile production is released in-river to minimize potential straying impacts (Brown et al. 2004).

Although off-site releases may result in increased straying, fall-run Chinook salmon releases at San Pablo Bay have been implemented to reduce mortality associated with migration through the Delta. Study results regarding the effectiveness of these releases have varied; however, overall recovery rates to ocean fisheries and inland returns were found to be 30% higher for releases at San Pablo versus releases upstream or at the hatchery (CDFG and NMFS 2001a).

The potential for genetic impacts on natural populations of cutthroat trout and rainbow trout subspecies (i.e., Lahontan cutthroat trout, coast cutthroat trout, summer-run steelhead trout, Little Kern golden trout, Volcano Creek golden trout, and Paiute trout) are associated with the inland hatchery program’s practice of stocking hatchery trout in drainages where these sensitive fish species occur. In particular, rainbow trout are known to readily hybridize with rainbow trout subspecies and with cutthroat trout when their ranges are not separated by some physical or temporal barrier. Since 2002, stocking of nonnative trout in drainages where Little Kern golden trout, Volcano Creek golden trout, and Paiute trout occur is no longer practiced, and CDFG has been implementing restoration efforts for these subspecies.

## Ecological Impacts

According to a variety of studies (Weber and Fausch 2003, 2005; Einum and Fleming 2001; Nickelson et al. 1986; Nickelson{should highlighted names be spelled alike?} 2003; Williams 2006), ecological impacts associated with artificial propagation may reduce the survival of naturally reproducing fish, amphibians, and reptiles as a result of the following:

- **Competition.** Hatchery fish may reduce survival of naturally reproducing fish through competition (Weber and Fausch 2003, 2005) or other density-dependent effects (Einum and Fleming 2001). Hatchery fish released in-river initially may displace wild fish and compete for food resources (Einum and Fleming 2001; Nickelson et al.1986). Hatchery-origin fish spawning instream must compete with wild fish for redd sites, and offspring then must compete for rearing habitat and food (CDFG and NMFS 2001a). Hatchery-origin fish may also compete for food and habitat with amphibians and, as a result of predation on amphibians, compete for prey with other amphibian predators (e.g., garter snake) (Matthews et al. 2002; Knapp et al. 2005).

- Food web disruption. Fish stocking has been shown to change assemblages of native zooplankton communities (Bradford et. al. 1994; Bradford et. al. 1998; Knapp 1996) and benthic macroinvertebrates (Knapp 1996). Changes in these communities can negatively affect food web dynamics and productivity.
- Behavioral. Hatchery fish respond to food, habitat, conspecifics, and predators in a different manner than do fish reared in natural environments (Flagg et al. 2000). Anadromous wild fish may be stimulated to migrate earlier than usual as a result of hatchery releases of fish ready to emigrate (Einum and Fleming 2001).
- Predation. Hatchery releases may attract predators to release sites where wild fish may be susceptible to predation (Nickleson 2003). Hatchery salmon or steelhead released as yearlings may prey on younger naturally reproducing fish (Williams 2006). Predation on amphibians by introduced fish is suspected to be a major factor in declines of amphibians (Fisher and Shaffer 1996; Fellers and Drost 1993; Jennings 1996).
- Disease. Straying of hatchery-origin fish could provide several ways for diseases to pass from hatchery fish to wild fish or from one watershed to another (CDFG and NMFS 2001b). Pathogens, such as *Saprolegnia*, that are introduced by hatchery trout into native ecosystems have been indicated in mortality of native amphibians (Blaustein et al. 1994; Kiesecker et al. 2001).
- Harvest. Hatchery-origin fish may attract fishers who also capture sensitive biological species, such as listed winter-run or spring-run Chinook salmon (Williams 2006).

Despite some potential impacts associated with hatchery programs, there are potential benefits too, such as hatchery production may help keep the size of very small populations above critical levels (RSRP 2002), hatchery-origin fish can divert harvest away from sensitive wild fish (USFWS 2006), species that prey on juvenile salmon/trout could be positively affected by release of hatchery fish (USFWS 2006), marine derived nutrients provided by decaying anadromous hatchery carcasses also may benefit freshwater ecosystems (Merz and Moyle 2006). As fish production increases in CDFG hatcheries, control of disease will become a pertinent issue. Intensive aquaculture is dependent on the use of medicines and chemicals to control the biological environment within the culture system. Several chemicals are used in hatchery operations, including antibiotics, antiparasitics, fungicides, and disinfectants. The degree of environmental damage attributable to the use of these chemicals depends on their toxicity to local species, their distribution in the environment, and their half life. Usually those organisms most closely related taxonomically to the target organism of any treatment will be the most at risk.

Hatchery use of antibiotics has the potential to disturb non-target neighboring organisms. For example, antibiotics can affect sedimentary biogeochemical processes presumably by interference with aquatic microbial ecosystem ecology. Furthermore, concerns exist regarding the development of resistant bacterial strains that threaten aquaculture operations, and the ability to transfer resistant



strains to the human food chain with the potential loss of effective medical antibiotic.

While not limited specifically to the impacts of hatchery chemicals, it has been documented that bacterial, algal, and benthic invertebrate communities downstream of hatchery effluent are different from those found upstream. Benthic communities sensitive to organic waste often will be replaced by pollution-tolerant forms in the vicinity of hatchery outfalls. This is a potentially significant impact.

- b. Increased fish production, as mandated in AB-7, may require the expansion of existing hatcheries, including the construction of buildings, holding facilities, and roads or improvement of existing roads. If these construction activities are to occur in riparian areas on the hatchery property, site-specific analysis will be required to document effects that may occur as a result of the site-specific hatchery expansion project. This is a potentially significant impact.
- c. Increased fish production, as mandated in AB-7, may require the expansion of existing hatcheries, including the construction of buildings, holding facilities, and roads or improvement of existing roads. This activity likely will affect both groundwater infiltration and surface water runoff rates. Changes in these parameters increase the potential for contaminant migration into local aquatic systems, including wetlands. In addition to impacts from increased surface runoff, decreased groundwater recharge and flow constrictions associated with construction activities potentially can affect wetlands. Mitigation of potential impacts would include surface runoff modeling followed by restrictions on construction activities that would lead to wetland impacts and restoration of affected areas. This is a less-than-significant impact with mitigation incorporated.
- d. Many of CDFG hatcheries have been established to mitigate the potential impacts of anthropogenic barriers to the movement of native fish populations. Mitigating techniques on dammed rivers include continued planting of hatchery-reared fish in streams to provide harvest opportunities and the use of hatchery-reared fish to maintain or increase natural production of target species. No impact.
- e. Project activities are not anticipated to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. If individual hatcheries expand to meet AB-7 goals, these expansion projects will be evaluated for interference with local policies and ordinances. The impact would be less than significant.
- f. Numerous habitat conservation plans (HCPs) and natural community conservation plans (NCCP) have been adopted throughout California. Several of these plans have conservation strategies pertaining to restoration and maintenance of streams and ponds to help special-status species recover. Examples of these special-status species include the California red-legged frog, California tiger salamander, western pond turtle, and foothill yellow-legged frog. In several counties, or parts thereof, private stocking permits are not required for stocking eight fish species (white catfish, channel catfish, blue catfish,

largemouth bass, bluegill, Sacramento perch, rainbow trout, and redear sunfish) in a private pond. Dependent on proximity to amphibian populations, fish stocking of private ponds in these areas could result in interference with the movement of native amphibians. According to Bradford et al. (1993), nonnative fish can limit amphibian dispersal, resulting in isolation of remaining populations, which then can result in inbreeding depression. Mitigation measures such as limiting stocking activities for those areas that are not currently regulated when there are sensitive species present may need to be included in future policies.

Other impacts on migratory species might occur during construction of new facilities if that construction includes instream work that might affect migratory fishes, or if the expansion of facilities would affect wetlands or other habitats that are needed by migratory waterfowl or other sensitive species. These impacts would need to be addressed in site-specific analysis if the expansion of existing facilities could affect these species. This would be a less-than-significant impact with mitigation incorporated.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>V. CULTURAL RESOURCES.</b> Would the project:					
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a. Cultural resources include prehistoric and historic archaeological sites, historic structures, and traditional cultural properties (TCPs). TCPs are places that may or may not have human alterations, but that are important to the cultural identity of a community or Indian tribe. The National Historic Preservation Act of 1966, as amended, requires that these resources be inventoried and evaluated for eligibility for listing in the National Register of Historic Places (NRHP) and that the effects of any proposed project be determined.

As previously explained, the proposed project involves improvements with some or all of CDFGs 21 fish hatcheries to keep pace with the increased production requirements of AB-7. However, specific information regarding what facilities will be improved and the scope of the improvements is not available at this time. While some improvements will occur within the footprints of existing structures, other improvements may be constructed outside of existing footprints.

Given the age of the hatchery buildings, it is possible that some of these buildings are historically significant and eligible for listing in the California Register of Historical Resources (CRHR), or locally designated historic resources. Activities associated with the proposed project may involve the alteration of these historical resources. While the impact on these historic resources may be significant, implementation of the following mitigation measures could reduce this impact to a less-than-significant level.

**Historical resource studies** that include conducting a visual inspection of the buildings, background research on the history of the project area, and property-specific research. Based on this research, the significance of built historical resources located in the project areas would be evaluated using criteria for listing in the CRHR. If the buildings are found to be historically significant, care will be taken not to adversely impact the structure. Implementing this mitigation will reduce the impact to less than significant.

- b. When construction of new structures and the installation of water supply and treatment systems requires excavating previously undisturbed areas it is unlikely that cultural material could be avoided by this project. In addition, grading and vegetation-clearing activities have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

Potential mitigation measures to reduce effects to cultural materials from construction activities to a less-than-significant impact include remote sensing, data recovery excavations, avoidance of cultural resources, construction monitoring, implementation of a protocol in the event that cultural resources are discovered, and long-term curation of artifacts. In addition, prior to any ground-disturbing activities, it would be necessary to conduct background literature searches and surveys in order to determine the presence of cultural resources and the effects of proposed activities on these resources. These activities would include contacting the Native American Heritage Commission, a records search of the California Historical Resources Information System, and a reconnaissance survey of the hatchery sites slated for improvements outside of the existing structural footprint for cultural resources

**Archeological resource studies** that would involve an archaeological inventory of the project area, contacting Native American representatives and other interested parties, conducting background research, and conducting a pedestrian inventory of the project area. Based on this analysis, the significance of resources would be evaluated using criteria for listing in the CRHR and impacts on historical resources would be mitigated (potentially through archaeological excavation) if they cannot be avoided. Implementing this mitigation will reduce the impact to less than significant.

- c. The project will not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Additionally, there will be further assurances that by implementing the above mitigation no paleontological resource no significant adverse impact will occur and the impact will be less than significant with mitigation.
- d. If human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Pub. Res. Code Sec. 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
- the coroner of the county has been informed and has determined that no investigation of the cause of death is required; and
  - if the remains are of Native American origin,
    - the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate

dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

- ❑ the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. If buried archeological resources (such as chipped or ground stone, historic debris, building foundations, or human bone) are inadvertently discovered during ground-disturbing activities, work would stop in that area and within 100 feet of the find until a qualified archaeologist could assess the significance of the find and make appropriate recommendations.

Implementation of this mitigation would reduce the impact to less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>VI. GEOLOGY AND SOILS.</b> Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

California's hatcheries are located in areas that are seismically active and subject to shaking from earthquakes that may occur along a number of regionally significant faults. The proposed project involves the expansion and construction of hatchery structures, and these structures could fail during seismic shaking. Because an increase in CDFG personnel and recreational anglers is associated with the proposed project, these persons would be exposed to increased risks. However, the potential for landslides, debris flows, swelling or collapsible soils, or other damaging geologic hazards is low. Because these events are highly improbable and would occur during a given short interval, and because improvements associated with the proposed project would not increase hazards to

levels significantly above current conditions, these impacts do not cross a threshold of environmental significance. Therefore, there would be a less-than-significant impact and no mitigation is required.

Although construction activities, including clearing and excavation, have the potential to cause soil erosion, this impact would not be substantial and could be controlled through construction BMPs. Therefore, the proposed project and its associated activities are expected to have a less-than-significant impact on the geological features of the project area. This is consistent with the Five Year Trout Hatchery Facility Infrastructure Plan.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>VII. HAZARDS AND HAZARDOUS MATERIALS.</b>					
Would the project:					
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. Fish hatcheries occasionally utilize chemical treatments to control disease and fungal outbreaks. For example many hatcheries use Iodophor (10% iodine solution) to control fungi on fish eggs. Furthermore, the retention of organic wastes from uneaten fish food and fish metabolic wastes raises the concern of accidental releases of this organic matter into the aquatic environment. However,



this occurrence is unlikely, since under the NPDES permit a Best Management Practices Plan is developed and implemented to reduce the discharge of both chemical and biological compounds as a result of operations. The NPDES permit and its associated Best Management Practices Plan serve as mitigation if such incidents occur.

- b. In addition, activities associated with the proposed project involve a small increase in the use of construction vehicles and operations vehicles including CDFG vehicles, vessels, and aircraft. Motorized equipment is associated with a potential for fuel leaks and spills. Given the sensitivity of hatchery environments to fuels, lubricants, and other toxic materials, this is considered a potentially significant impact.

To limit the potential for accidental release of hazardous materials into the environment, CDFG would implement mitigation measures to reduce these impacts to a less-than-significant level.

- develop and implement an equipment maintenance program for all motorized equipment used in hatchery facilities;
  - consider the likelihood of release of potentially toxic materials in a risk management plan (RMP) that includes all facilities that store or handle acutely hazardous materials in reportable quantities; and
  - under the National Pollutant Discharge Elimination System (NPDES) permits a best management practices plan is developed and implemented to reduce the discharge of both chemical and biological compounds as a result of operations.
- h. Many hatcheries are currently located in rural areas and mountainous settings that can be susceptible to wildfires. Staff and visitors may be exposed to the risk of wildfires, however, hatchery facilities that are constructed as part of this project will be on current sites, and there will be little additional exposure as a result. The impact is considered less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>VIII. HYDROLOGY AND WATER QUALITY.</b>				
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Contribute to inundation by seiche, tsunamis, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. The direct (point source) discharge from hatcheries is regulated by the U.S. Environmental Protection Agency (EPA) under the Clean Water Act. The U.S. EPA delegates its regulatory oversight authority to the State Water Resources Control Board (State Water Board) and its nine Regional Water Quality Control Boards (RWQCBs). Each of the 20 hatcheries is operating under an RWQCB Order that specifies limits on various pollutants and volumes of water that may be discharged into a receiving water body. The orders are protective of the beneficial uses of receiving waters. Various hatcheries have been in violation of permit requirements on separate occasions. The violations were addressed quickly, and the hatcheries continue to operate according to all permit requirements. However, the proposed project to increase hatchery production at several locations likely will result in increased pollutant loads to respective receiving waters. It is unknown at this time what the magnitude of those increases may be, whether the increases will be within existing permit limits, or whether the increased loading would cause or significantly contribute to exceedance of a water quality standard. This impact is considered to be potentially significant.

The stocking of fish in systems throughout the State may result in alterations of various water quality parameters within the receiving water bodies. The introduction of substantial fish biomass into an aquatic system may alter the system's equilibrium among its physical, chemical, and biological components, which, in turn, could cause changes in certain water quality parameters. For example, increased biochemical oxygen demand (BOD) or nutrient loading may affect diurnal and seasonal dissolved oxygen regimes. This effect is considered to be potentially significant.

The major particulate effluent from hatcheries consists of uneaten fish food and fecal matter. Hatchery effluent has the potential to alter various properties of the receiving water such as suspended solids, settleable solids, temperature, dissolved oxygen, BOD, and nutrient. Increased production associated with AB-7 likely will result in addition of food and fecal matter to the hatchery output, and may result in significant impact on communities downstream of the hatchery effluent. Addition of suspended solids and nutrients to the water column can lead to eutrophication and subsequent oxygen drain as the wastes are degraded by bacteria. Furthermore, changes in production per unit volume of water and the retention time of water in the hatchery are known to influence the quality of effluent.

Cleaning operations, however, are designed to mitigate the impacts of hatchery effluents. Most culture units are designed to concentrate uneaten food and feces near the culture unit drain and are cleaned by temporarily removing a standpipe in the culture unit and brushing debris down the culture unit drain. The re-suspended biosolids (uneaten food and feces) are transported by culture water flow out of the culture unit to a quiescent zone or a settling pond, the latter being used by many hatcheries to dilute, detain, or stabilize discharge water before it is released into the environment. The quiescent zones are screened off areas below the rearing area at the tail end of raceways. The screen, constructed with polyvinyl chloride (PVC) or aluminum pipe mounted on a wood frame, prohibits fish from entering the quiescent zone, which allows the solids to settle

undisturbed. Depending on the culture unit design, fish loading, and water flow, biosolids may be removed daily, weekly, or at some other interval designed to maximize fish health and growth while minimizing labor and other costs. All CDFG raceways and ponds have quiescent zones.

Runoff during construction activities or during normal operations has the potential to violate water quality standards. Construction activities associated with the hatchery facilities would have the potential to disturb pervious surfaces and contribute pollutants such as sediment to receiving waters. CDFG will implement the requirements of the State Water Board General Permit for Construction Activities and for Industrial Activities. Compliance with these permits, BMPs, and appropriate mitigation will protect the beneficial uses of receiving waters. Therefore, this impact is considered to be less than significant with mitigation.

For facilities requiring a permit, National Pollutant Discharge Elimination System (NPDES) permits establish site-specific requirements for effluent limits and monitoring requirements. Hatcheries currently operate under NPDES permits to mitigate the impacts hatchery effluent may have on receiving waters. Recently, State and federal agencies have taken an increasingly aggressive approach to the control of hatchery discharges. The State agencies, and U.S. EPA, Region 10, have provided guidance for the industry (EPA 2000). Any hatchery expansion would require a revised NPDES permit from the applicable RWQCB to ensure that appropriate limits on effluent discharges are set and enforced. This is a potentially significant impact.

- b. Water quality standards for groundwater are related to the beneficial uses of groundwater at each location, associated groundwater objectives contained in the RWQCB Basin Plans, and applicable State water quality policies. There is the potential for chemicals stored on site and leached water from hatchery operations to infiltrate into the aquifer. In addition, there is the potential for the overdrafting of groundwater aquifers from expanded operations, resulting in decreased groundwater quality. This impact is considered to be potentially significant.

The following facilities have used groundwater up to the quantities listed below, which represent the facilities maximum pumping level per day. In many cases, these facilities may not operate at this level on a year-round basis but have the ability to operate at this level without affecting local groundwater resources. In some cases, pumping agreements have been entered into with local agencies to provide additional beneficial flows. It is not anticipated that any of the hatcheries would need to be operated at levels requiring groundwater consumption above the maximum operational rates provided below as a result of the proposed project. In many cases, hatchery pumping rates will average less than the maximum allowable rates indicated below.

- Mad River—up to 7.5 million gallons/day
- Black Rock—18.74 million gallons/day
- Fillmore—11.37 million gallons/day
- Fish Springs—17.12 million gallons/day

- Mojave—5.1 million gallons/day pumped and ~2.0 million gallons re-circulated for a total maximum usage of 7.1 million gallons/day
- Thermalito Annex to the Feather River Hatchery—minimum of 3.58 million gallons/day and a maximum of 7.8 million gallons/day

Salmonid freshwater aquaculture is typified by relatively high volume, single-pass culture units. In these facilities, water enters at one point of the culture unit (usually the upper head of a raceway or the side of a circular or square culture tank) and exits out of a drain (usually at the lower tail of a raceway or the center of a circular or rectangular tank). In order for proper respiration to be maintained, sufficient water flow is a primary consideration. Furthermore, high water temperatures and low flow rates may increase the propensity for hatchery disease and decrease the quality of hatchery effluents. To avoid possible disease outbreaks common in intensive aquaculture production, CDFG hatcheries may need to increase their draw of local water supplies.

If the proposed project requires increased withdrawals from groundwater supplies, it would be appropriate to conduct a groundwater investigation for each hatchery that analyzes the effects to the groundwater aquifer from the proposed project. The investigation should include a well survey that describes groundwater flow and a description of effects to other public, commercial, and domestic water supplies within ½ mile of the project areas.

- c. No actions have substantially altered the existing drainage pattern of a hatchery site or area, such as the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site. As previously described, the expansion of hatchery facilities associated with the proposed project could result in increased outfall quantities and the potential for related erosion and/or deposition. To maintain proper respiration and avoid possible disease outbreaks common in intensive aquaculture production, CDFG hatcheries may require increased draw on local water supplies. Changes in the flow rates and flow volumes of water sources used for flowing water fish culture most likely will change the downstream sediment transport characteristics of the stream. In addition, hatchery effluent can be higher/lower in sediment content than the source water, potentially altering downstream sediment loads. Furthermore, sediment removed from settling ponds and quiescent zones will require appropriate disposal to prevent non-point source sediment impacts on receiving waters. While these are potentially significant impacts, this potential is expected to be fully mitigated by site designs, BMPs, water rights, and NPDES permitting. These provisions will be used to ensure that changes in river/streamflows and potential hatchery effluent impacts will not contribute significantly to substantial erosion or siltation of the local aquatic environment. Therefore, this impact is considered to be less than significant.
- d. No actions have substantially altered the existing drainage pattern of a hatchery site or area, including the alteration of the course of a stream or river or substantial increase in the rate or amount of surface runoff in a manner that could result in flooding on or off site. Increased fish production, as mandated by AB-7, would require the expansion of existing hatchery facilities, including the

construction of buildings, ponds, settling basins, holding facilities, and roads or improvements to existing roads. These activities will likely increase stormwater runoff that otherwise would have infiltrated into the ground. In the case that major construction/renovation projects are planned for any of the CDFG hatcheries, it would be appropriate to model potential changes in surface runoff to mitigate future flooding on site and off site. Otherwise, while expansion of hatchery facilities could result in increased surface runoff, these increases are expected to be negligible. Therefore, this impact is considered to be less than significant.

- e. The project has not created or contributed runoff water that would exceed the capacity of existing or planned stormwater drainage systems or would provide substantial additional sources of polluted runoff. Sediment removed from settling ponds and quiescent zones will require appropriate disposal to prevent non-point source sediment impacts on local waters. In addition, expanded operations are required to include project design features and/or mitigation measures to ensure that this threshold of significance will be met. Therefore, this impact is considered to be less than significant with mitigation.
- f. The project has the potential to incrementally degrade water quality even if the resulting condition still meets water quality standards. The project will be required to be consistent with California's anti-degradation policy. This impact is considered to be potentially significant.
- g. The project does not involve the placement of housing within a 100-year flood hazard area. Therefore, there would be no impact.
- h. Hatcheries are generally located directly adjacent to inland surface waters. Therefore, any expansion of CDFG hatcheries to meet the increased fish production requirements of AB-7 likely potentially would involve the placement of new structures within the existing 100-year floodplains associated with adjacent surface waters. These structures may have the potential to impede or redirect flood flows. Therefore, this impact is considered to be potentially significant.
- i. The hatcheries generally are located adjacent to inland surface waters, with many hatcheries located close to dams or levees. A potential expansion of the hatcheries or creation of new facilities potentially would increase the risk that these facilities, hatchery workers, and visitors could be adversely affected by flooding. Flooding of the hatchery facilities as a result of dam failure or other causes may result in loss, injury, or death. Increasing the facility size and/or the quantity of hatchery staff potentially would result in an increased risk of facilities or persons being affected by flooding resulting from the failure of a dam or levee. Therefore, this impact is considered to be potentially significant.
- j. The hatcheries are located at inland locations that are far from the Pacific Ocean. The project's operation and construction activities would not be at risk of a tsunami. Therefore, there would be no impact.

As previously stated, CDFG hatcheries are located on or immediately adjacent to inland surface waters. Although the potential is remote, high winds or an earthquake could produce a seiche in the surface waters adjacent to the hatcheries that would potentially inundate the hatchery. However, the potential risk of a seiche affecting the hatcheries would not be increased by the project.

Operation of the hatcheries would not contribute to inundation by mudflow. While the expansion or creation of new hatchery facilities potentially could increase the contribution to inundation by mudflow, the impact would not significantly increase as a result of implementing this project. The impact is less than significant.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>IX. LAND USE AND PLANNING.</b> Would the project:					
a.	Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a. Development associated with the Project does not have the potential to divide an established community or conflict with any applicable land use plan.
- b. Currently no plan exists for hatchery development to expand beyond the lands currently designated for the hatchery facility. If expansion of a hatchery facility is required to meet increased demands in production, it would occur on areas within the hatchery complex that are already zoned for such use.
- c. Downstream impacts of hatchery effluent raise concerns over the potential for conflicts with HCPs or NCCPs. As previously discussed, ecological risks of artificial propagation on listed wild populations can occur as a result of (1) competition for food and territory between wild and hatchery fish, (2) predation by hatchery fish on native species (including amphibians, fishes, and invertebrates), and (3) spread of invasive species from hatcheries to stocked waters (i.e., threats associated with angling or vessels potentially used by anglers, leeches, zebra mussel, Quagga mussel, New Zealand mudsnail). In addition, hatchery effluent may result in a significant impact on bacterial, algal, and benthic invertebrate communities downstream of hatcheries. To reduce these impacts to a less-than-significant level, CDFG would implement hatchery cleaning protocols and comply with discharge limitations as defined in NPDES permits that would consider the impact of hatchery effluent on sensitive ecosystems downstream.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>X. MINERAL RESOURCES.</b> Would the project:					
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Activities associated with the proposed project would not have any effect on mineral resources. Therefore, there would be no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>XI. NOISE.</b> Would the project:					
a.	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Hatchery facilities generally are located in remote areas that are sparsely populated and have few sensitive receptors. During standard operations, hatchery and acclimation ponds generate intermittent noise at low levels. Water pumping systems tend to be the most audible component of hatchery facilities; however, this ambient noise frequently is drowned out by the sound of dams, outflows, and running water.

- a. While a temporary increase in noise is expected to be generated by equipment, vehicles, and personnel during construction activities, this impact would be temporary in nature and therefore is considered negligible. Any increases in noise associated with increased production, such as increases in pumping and water flow, would be practically undetectable from current conditions. Therefore, there would be no impact.
- b. Increased stocking within wilderness areas may increase or concentrate human use at popular lakes or other fishing sites. The added voice or camping noise levels associated with increased production potentially could encroach on wilderness solitude values, disturb wildlife, and disturb the users' wilderness

experience. However, these increases in noise levels are anticipated to be minor and would be consistent with current noise generated by the hatcheries and recreational noise. Therefore, any increases in noise are not expected to exceed local general plan standards or applicable noise ordinances/standards. Therefore, there would be no impact.

- c. Sources of ambient noise associated with the proposed activities include noise generated by hatchery facilities, including water supply and treatment systems, hatchery buildings, and raceways. As described above, operation of these types of facilities does not generate excessive noise and is not expected to increase noise levels substantially above existing conditions in the project vicinities. Therefore, there would be no impact.
- d. Some activities associated with the proposed project, such as a potential increase in vehicles used for the planting of fish, could result in sound that is audible to residents and visitors in the project vicinities. However, this effect would be temporary in nature and is not expected to cross a threshold of environmental significance. Additionally, the use of newer engines on CDFG watercraft likely would result in a reduction in noise levels compared to baseline conditions. Therefore, there would be no impact.
- e. Hatcheries are not located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and do not expose people residing or working in the project area to excessive noise levels; no impact.
- f. Hatcheries are not located in the vicinity of a private airstrip and do not expose people residing or working in the project area to excessive noise levels; no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>XII. POPULATION AND HOUSING.</b> Would the project:					
a.	Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Activities associated with the proposed project would not have an effect on population and housing. No construction of hatchery employee housing or temporary housing for construction personnel is proposed. Although hatchery improvements would constitute new infrastructure, these improvements would not result in increased population growth, displace existing housing, or displace any current population. Therefore, there would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>XIII. PUBLIC SERVICES.</b> Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

AB-7 imposes production goals and minimum releases of trout beginning July 1, 2007. As previously stated, AB-7 earmarks a significant amount of money for CDFG's fish stocking program, with funds derived from a percentage of sport license fees. CDFG's Implementation Plan for AB-7 indicated that levels of funding for the fish stocking program would increase substantially in order to meet the increased fish production requirements of AB-7. While this increase in hatchery production would require the expansion of some or all of CDFG's existing hatchery facilities, no associated increases in public services including fire, police, school, park, or other public facilities would be necessary to maintain current performance ratios. None of these facilities would be required during construction either. Therefore, there would be no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>XIV. RECREATION.</b> Would the project:					
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. The production of trout species will be increased as a result of the implementation of AB-7 and activities associated with the proposed project. This increase in production will be achieved through options within the existing hatchery system, including expansions and modifications to existing hatchery facilities, adjustments in the duration and number of rearing periods per year, and the use of net pens in some planting locations as an extension of existing rearing facilities. The addition of new stocking locations is not expected at this time. Because facility improvements would occur on existing hatchery properties, there would be no net loss in recreational opportunities as a result of the proposed project. Conversely, visitors would benefit from the proposed activities as these facility and operational improvements would produce additional fish in support of recreational fishing. This benefit to recreational anglers is expected to have a concurrent beneficial impact on other recreational uses, such as camping. While the proposed project likely would increase activity in public recreation areas where fish are stocked, this increase is not expected to result in significant physical deterioration to existing facilities, and the impact would be less than significant.
- b. The Project will not necessitate the construction of new recreational facilities or the expansion of existing facilities. Therefore, there would be no adverse physical effect on the environment. Therefore, there would be no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>XV. TRANSPORTATION/TRAFFIC.</b> Would the project:					
a.	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g.	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. As previously stated, CDFG hatcheries generally are located in remote areas adjacent to inland surface waters. General transportation patterns in these areas are typical of lightly populated rural communities. Roads are used generally by residents, recreationists, and commercial trucks. Traffic by hatchery employees and the visiting public is expected to increase slightly as a result of the proposed project. While an increase in the number of trucks, vessels, and aircraft used to transport fish from hatchery facilities to planting sites is expected, this increase also would be minimal, would occur only during the active stocking period, and the impact would be less than significant from these activities.

The stocking of trout in rural communities can temporarily generate traffic loads that exceed normal ambient levels. At times, trout stocking can create traffic congestion and traffic flow impacts. In some areas, counties have established parking and other ordinances to prevent traffic congestion near recreation sites. Trout stocking in these sites can, at times, cause those ordinances/limits to be exceeded, creating traffic congestions and hazards. However, the increase in

stocking is not expected to significantly increase these occurrences of congestion. The impact is less than significant.

- b. As described above, the increase in traffic would be minimal and will be on currently used and properly maintained roads. This project will not require the counties to change roadways or impact the current level of service. No Impact.
- c. While CDFG does operate aircraft for its stocking activities, the increase in air traffic will be minimal and will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. The impact will be less than significant.
- d. The project will not increase the risk of hazards or change uses of roadways or cause incompatible uses to occur. There is no impact.
- e. The project will not result in emergency vehicles being able to access areas necessary for providing services. There is no impact.
- f. Trout stocking in rural areas can create demand for parking that exceeds what is available. Anglers then often park in undesignated areas, creating impacts on natural vegetation and soils or causing traffic congestion. However, the increase in the occurrences of exceeding available parking areas will not increase appreciably from current levels and the impacts are less than significant.
- g. The project will not cause conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks); no impact.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>XVI. UTILITIES AND SERVICE SYSTEMS.</b> Would the project:					
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. The direct (point-source) discharges of hatcheries are regulated by the U.S. EPA under the Clean Water Act. The U.S. EPA has delegated this regulatory authority to the State Water Board and its nine RWQCBs. Each of the State's hatcheries currently operates under an RWQCB Order that specifies operating and monitoring criteria. None of the hatcheries currently exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board's. The project will not result in an increase in wastewater quantities that will exceed wastewater treatment requirements. The impact would be less than significant.
- b. While expansion of hatchery facilities would be required to meet AB-7, the associated increase in wastewater utilities would be less than significant. There

would not be any construction of wastewater handling facilities such as septic systems or new connections as a result of this project.

- c. Activities associated with the proposed project are not expected to exceed the capacity of existing stormwater drainage systems or provide additional sources of polluted runoff. Settling ponds would be appropriately maintained to prevent non-point source impacts on adjacent receiving waters. Facility improvements to accommodate expanded operations would be required to include project design features and mitigation measures to ensure that this threshold of significance will be met. Therefore, this impact is considered less than significant with mitigation.
- d. In hatchery operations, sufficient water flow is essential for proper fish respiration, disease control, maintaining appropriate water temperatures, and controlling the quality of hatchery effluent discharged to receiving waters. As previously described, CDFG hatcheries are restricted by daily maximum pumping levels that have been set to allow the hatcheries to operate without adversely affecting groundwater resources. In some cases, pumping agreements have been entered into with local agencies to provide instream flows. The hatcheries currently have entitlements or additional water resources in order to increase their operations in accordance with the requirements of AB-7. There is no impact.
- e. CDFG hatcheries are not served by wastewater treatment providers. Wastewater from hatchery operations is treated or disposed of on site or is discharged into adjacent receiving waters. Therefore, any increase in wastewater as a result of expanded operations would not affect the capacity of any wastewater treatment provider or detract from the provider's existing commitments. Therefore, there would be no impact.
- f. Solid waste from CDFG hatcheries is not transported to any landfill but is managed on site. Therefore, any increase in solid waste disposal needs associated with the proposed project would not affect the permitted capacity of any landfill. Therefore, there would be no impact.
- g. Solid waste at CDFG facilities is managed through recycling/composting and septic systems. Human waste is treated separately. No expansions of these facilities are currently proposed. While an increase in solid waste would necessarily be associated with increased hatchery operations, the following mitigation measures would reduce this impact to a less-than-significant level: (1) CDFG would handle and dispose of all solid waste material in such a manner as to prevent its entry into State ground or surface water; (2) CDFG would not allow leachate from its solid waste material to enter State waters nor allow such leachate to cause violations of the State Surface Water Quality Standards; (3) CDFG would prepare and implement a solid waste management plan that will include all solid wastes generated or handled at the facility and a description of how solid and biological wastes are collected, stored, and disposed of.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<b>XVII. MANDATORY FINDINGS OF SIGNIFICANCE.</b>				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. Mandatory Findings of Significance, if they exist for a proposal, are effects that require that an EIR be prepared unless mitigation measures are available that reduces the effects to less-than-significant levels. CDFG finds that implementation of the proposed project might be associated with potential effects on special-status species and biological resources.

In addition, CDFG finds that implementation of the proposed project has the potential to degrade the quality of the environment. Hatcheries withdraw water from water bodies and groundwater for fish rearing. In addition, hatchery operations produce large amounts of wastes such as nutrients and particulate matter from feces and uneaten food. An increase in hatchery effluent as a result of the proposed action may contribute to pollution of inland surface waters and negatively affect adjacent environments. The impact on water quality and downstream environments from an increase in hatchery waste and effluent will be described in the EIR to be prepared by CDFG. These are considered to be potentially significant impacts which require further analysis in an EIR to determine the impacts and possible mitigation to reduce the impacts to less than significant.

- b. Because several fish, amphibian, and reptile species found in California are listed or proposed for listing under the U.S. Endangered Species Act (ESA), State and federal resource agencies must ensure that an expansion of hatchery operations would not present a risk to any listed species. Recent studies indicate that hatchery programs may reduce both genetic fitness and genetic variation of both hatchery and naturally spawned fish populations, and may reduce the survival of naturally reproducing fish, amphibians, and reptiles as a result of various genetic and ecological mechanisms. Genetic interactions with other populations could be important if it is found that the presence of hatchery fish causes a reduction in the ability of wild spawned fish to successfully reproduce. Farm-raised fish that escape into the wild also can negatively affect wild populations through competition for food, habitat, and mates. In addition, the high densities of fish held at aquaculture facilities can lead to increased levels of disease and parasites that can be transferred to wild fish. Competition and predation related to other populations also could be important if it is found that the presence of additional hatchery fish adversely affects the survival of listed endangered species as a result of an inability of wild spawned fish to find sufficient food resources, or increase the level of predation on other fish species. These relationships will be described in a biological assessment and in the EIR/EIS to be prepared by CDFG.

While CDFG has agreed to enact numerous mitigation measures to avoid, minimize, or offset impacts associated with the proposed action, the overall effect of the mitigation measures incorporated into the proposed project may not represent a net decrease in potential impacts on listed species and the environment. Hatcheries have been identified as just one of the factors responsible for the depletion of listed species. Other factors include loss of habitat, water diversions, water quality, global warming, etc. Therefore, the effects of the proposed action could be part of “cumulatively considerable” environmental impacts which may be potentially significant.

- c. The project does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. There is no impact.